Introduction

The Centers for Disease Control (CDC), Advisory Committee on Immunization Practices, and American College Health Association (ACHA) recommend that all members of a campus community ages 6 months and older without contraindications receive routine annual influenza vaccination.

Only 36.2% of adults ages 18-49 received the influenza vaccine for the 2022-2023 season. This figure falls short of the 70% Healthy People 2030 target recommendation, as well as the ACHA Healthy Campus 2020 target goal of approximately 43.9%.

Previous studies of United States university and college students demonstrate influenza vaccination percentages ranging from 20.6% to 62.12%. These studies are limited by their relatively small sample sizes (ranging from 205-1021 students), convenience sampling methods, and survey data that predates the beginning of the COVID-19 pandemic.

Comprehensive data sources which help to define the proportion of influenza vaccination among campus communities are lacking, particularly as these cohorts are emerging from a global pandemic.

Additionally, a deeper understanding of the reasons for variance in influenza vaccination across systems is needed.

Objective: Determine the influenza A vaccination percentage across a large college health system.

Study Summary

Influenza vaccination data were collected from nine University of California (UC) Student Health Services (SHS) centers.

"Students" included in the study were defined as any enrolled student who was living, learning, or working on any of the included UC campuses. Students who were granted exemptions to the vaccine mandate were included in the total population count.

Students who were enrolled in online-only programs, evening and weekend programs, study abroad programs, and/or were on "filing fee" status were excluded from this analysis.

Outcome of interest: Proportion of students with a documented influenza vaccination from August 1, 2022 – April 1, 2023.

Results

Total students included: 285,429
Students with evidence of having received a 2022-2023 seasonal influenza vaccine: 139,429
Percent of students vaccinated: 48.71%

Table 1. Influenza A vaccination numbers and overall vaccination percentages at UC SHS campuses for the period of August 1, 2022 – April 1, 2023.

<table>
<thead>
<tr>
<th>Campus</th>
<th>Total Number of Eligible Students</th>
<th>Number of Students with Influenza Vaccine</th>
<th>Percentage of Students with Influenza Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC Berkeley</td>
<td>44,997</td>
<td>13,071</td>
<td>29.05%</td>
</tr>
<tr>
<td>UC Davis</td>
<td>40,772</td>
<td>17,329</td>
<td>42.50%</td>
</tr>
<tr>
<td>UC Merced</td>
<td>8,537</td>
<td>2,722</td>
<td>31.88%</td>
</tr>
<tr>
<td>UC San Diego</td>
<td>38,941</td>
<td>9,958</td>
<td>25.57%</td>
</tr>
<tr>
<td>UC Irvine*</td>
<td>34,879</td>
<td>24,831</td>
<td>71.19%</td>
</tr>
<tr>
<td>UC Riverside*</td>
<td>25,749</td>
<td>16,144</td>
<td>62.70%</td>
</tr>
<tr>
<td>UC Los Angeles*</td>
<td>45,656</td>
<td>36,585</td>
<td>80.13%</td>
</tr>
<tr>
<td>UC Santa Cruz*</td>
<td>19,478</td>
<td>10,623</td>
<td>54.54%</td>
</tr>
<tr>
<td>UC Santa Barbara*</td>
<td>26,420</td>
<td>7,762</td>
<td>29.45%</td>
</tr>
<tr>
<td>Total</td>
<td>285,429</td>
<td>139,045</td>
<td>48.71%</td>
</tr>
</tbody>
</table>

*These campuses systematically retrieve data from the California Immunization Registry (CAIR).

Figure 1. UC SHS Influenza A vaccination proportions for the period of August 1, 2022 - April 1, 2023, by campus. Average vaccination percentage = 48.71%

Discussion

In this large population-based prevalence study, an approximate influenza vaccination percentage of 49% was found among more than 285,000 eligible students.

Nine out of ten UC campuses use the same electronic health record systems (EHR; Point and Click Solutions), with one using EPIC. Of those on Point and Click, five are programmed with bidirectional communication to systematically update their students’ immunization records with vaccination data from the California Immunization Registry (CAIR). The other campuses rely on student self-reporting of vaccinations and SHS staff documenting vaccinations administered at the health center for vaccine data. Utilization of the CAIR registry’s bi-directional functionality with the SHS EHR appears to have a direct correlation with increased rates of vaccination reported, as it identifies and uploads the records for students who may have been immunized by other non-SHS facilities/pharmacies in the state but who failed to upload their records themselves. At UC Irvine, these non-SHS off-campus influenza vaccinations accounted for nearly 75% of the total vaccines received by UCI students.

While the UC Office of the President’s Policy on Vaccination Programs mandates all students receive their annual influenza vaccination, the option exists for students to complete a declination form allowing them to “opt out” of receiving the influenza vaccine without consequence. This option for declination may have been interpreted and/or communicated differently across the UC system by administrators on each of the campuses.

Conclusion

This benchmarking study offers additional insight into Influenza A vaccination proportions across one of the largest college health systems in the country and provides an update to current understanding of Influenza A vaccination proportions on college campuses.

While the average vaccination percentage of 49% across the entire system is encouraging, the results demonstrate a wide range of vaccination proportions, possibly influenced by variations in data reporting, exemption percentages and interpretation of system wide policy.

References